REMARKS / ARGUMENTS

I. General Remarks and Disposition of the Claims

Please consider the application in view of the following remarks. Applicants thank the Examiner for his careful consideration of this application, including the references Applicants have submitted in case and, pursuant to Manual of Patent Examining Procedure § 609.02, all references submitted in the applications to which this application claims priority under 35 U.S.C. § 120.

At the time of the Office Action, claims 1, 3-19, 21-28, 30, 32-36, 38-42, 44, 56, 58-62, 64-73, 82, 83, 85-100, and 102-111 were pending in this application. Claims 1, 3-19, 21-28, 30, 32-36, 38-42, 44, 56, 58-62, 64-73, 82, 83, 85-100, and 102-111 stand rejected. Claims 1, 19, 30, 41, 56, 82, 86, and 95 are amended herein. Claims 9, 26, 38, 58, 64, 91, 96, and 102 have been canceled herein. These amendments are supported by the specification as filed. All the amendments are made in a good faith effort to advance the prosecution on the merits of this case. It should not be assumed that the amendments made herein were made for reasons related to patentability. Applicants respectfully request that the above amendments be entered and further request reconsideration in light of the amendments and remarks contained herein.

II. Remarks Regarding Allowable Subject Matter

In the Office Action, the Examiner noted that claims 9, 10, 26, 27, 38, 39, 91, and 92 "would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." (Office Action at 5.) Applicants thank the Examiner for his indication that these claims would be allowable. Accordingly, to place this application in condition for allowance, Applicants have amended independent claims 1, 19, 30, and 86, to recite the allowable subject matter of dependent claims 9, 26, 38, and 91, respectively. Because Applicants have amended independent claims 1, 19, 30, and 86 to recite this allowable subject matter, Applicants respectfully assert that assert that independent claims 1, 19, 30, and 86 and their dependent claims are allowable for at least the same reasons. Thus, Applicants respectfully request the allowance of those claims.

III. Remarks Regarding Rejections Under 35 U.S.C. § 103(a)

A. Claims 1, 3, 7, 8, 11-19, 24, 25, 28, 30, 32, 36, 40-42, 56, 58, 62, 66-73, 82, 83, 86, 90, 93-96, 100, and 104-111

Claims 1, 3, 7, 8, 11-19, 24, 25, 28, 30, 32, 36, 40-42, 56, 58, 62, 66-73, 82, 83, 86, 90, 93-96, 100, and 104-111 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,498,994 issued to Heilweil (hereinafter "*Heilweil*") in view of U.S. Patent No. 3,252,904 issued to Carpenter (hereinafter "*Carpenter*") as further evidenced by U.S. Patent No. 3,617,095 issued to Lissant (hereinafter "*Lissant*"). With respect to these rejections, the Office Action states:

> Examiner notes that the specification in paragraph [0023] on page 7 defines the nanoparticle source as comprising at least a portion of particle sizes greater than individual atoms and less than "bulk solids". Bulk solids particles sizes have been defined to range from "very small" to "40 mesh to 500 mesh" or up to two inches; and from "10 to 1000 microns". *See e.g.*, col. 5, lines 39-44 of Lissant; claim 4 in U.S. Patent Application 2005/0006305 A1.
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> Heilweil discloses a drilling fluid composition, and a method of drilling a well bore using thereof, said drilling fluid composition comprising, e.g., 1.5% polyvinylpyrrolidone (PVP) (to inhibit shale), solvent, water, clay (weighting agent) and salt. (Abstract; col. 3, lines 1-33; Examples 1 and 5) The salt can be present from about 10% by wt. up to saturation point and can be sodium chloride (known "bridging agent"), calcium chloride, calcium bromide and zinc bromide. (Col. 3, lines 65-67; col. 5, lines 31-36; Example 3) The composition can contain other additives, such as fluid loss control solids. (Col. 5, lines 46-56)
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> However, Heilweil does not expressly disclose PVP to be crosslinked or its particle size.
>
> On the other hand, Carpenter teaches adding crosslinked PVP to a fluid composition for use in subterranean formation applications, wherein the fluid composition can comprise chloride salt brine and a particle size of less than about 20 to 60 mesh. (Col. 7, lines 31-60; Table IV; Drawing) The drawing in Carpenter depicts rates of swelling inhibition with respect to particle size. (Col. 7, line 68 to col. 8, line 18)
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> Carpenter further teaches that the rate of swelling activity (fluid-loss control rheology) of the crosslinked PVP particles in brine/water can be adjusted by particle size to attain a preferred

> rate of fluid loss control in the subterranean formation application. (Col. 8, liens 26-61)
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> Therefore, it would have been obvious to a person of ordinary skill in the art at the time that the claimed invention was made to choose a crosslinked PVP (of a preferred particle size) for the PVP component of the drilling fluid in Heilweil's method of drilling a well bore. It would have been obvious to one skilled in the art to incorporate a preferred particle size of a crosslinked PVP in the aqueous drilling fluid composition to be able to manipulate the degree of fluid-loss control and attain a resultant method of drilling that is more efficient as taught by Carpenter.

(Office Action at 3-4). Applicants respectfully disagree.

In order for a reference or combination of references to form the basis for a rejection under § 103(a), a *prima facie* case of obviousness must be established. Obviousness is determined by construing the scope of the prior art, identifying the differences between the claims and the prior art, determining the level of skill in the pertinent art at the time of the invention, and considering objective evidence present in the application indicating obviousness or nonobviousness. *Graham v. John Deere*, 383 U.S. 1, 17 (1966). Applicants respectfully submit that due to the differences between the claims as currently amended and the cited references the Examiner has not established a *prima facie* case of obviousness, in that the combination of *Heilweil* and *Carpenter* fails to teach or suggest all of the elements of independent claims 1, 19, 30, 41, 56, 82, 86, and 95, as amended, as required to obviate these claims.

Although Applicants do not necessarily agree with the rejection, Applicants have amended claims 1, 19, 30, and 86 to place these claims in condition for allowance. As set forth above in Section II, Applicants have amended independent claims 1, 19, 30, and 86, to recite the allowable subject matter of dependent claims 9, 26, 38, and 91, respectively. Accordingly, Applicants respectfully submit that independent claims 1, 19, 30, and 86 are allowable over the combination of *Heilweil* and *Carpenter*.

With respect to independent claim 41, Applicants respectfully submit that the combination of *Heilweil* and *Carpenter* fails to teach or suggest a method of drilling using a fluid composition comprising polyvinyl pyrrolidone nanoparticles having an average particle size of less than about 1,000 nanometers. Rather, as the Office Action states, "the prior art of record

does not teach [] a method of drilling using a fluid composition comprising PVP particles having a particle size of less than about 1000 nanometers." (Office Action at 5.) Since Applicants have amended independent claim 41 to require this limitation, Applicants respectfully submit that independent claim 41 is allowable over the combination of *Heilweil* and *Carpenter*.

With respect to independent claims 56, 82, and 95 Applicants respectfully submit that the combination of *Heilweil* and *Carpenter* fails to teach or suggest a drilling fluid that comprises polyvinyl pyrrolidone nanoparticles having an average particle size of less than about 1,000 nanometers. Although the Examiner has not explicitly stated that this combination fails to teach a drilling fluid composition comprising PVP particles having a particle size of less than about 1000 nanometers, Applicants note that the Examiner has not rejected dependent claims 64 and 102, which require this limitation, over the combination of *Heilweil* and *Carpenter*. Since Applicants have amended independent claims 56, 82, and 95 to require this limitation, Applicants respectfully submit that independent claims 56, 82, and 95 are allowable over this combination.

Accordingly, Applicants request that the rejection of independent claims 1, 19, 30, 41, 56, 82, 86, and 95 be withdrawn. Since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 3, 7, 8, 11-18, 24, 25, 28, 32, 36, 40, 42, 62, 66-73, 83, 90, 93, 94, 96, 100, and 104-111 depend, directly or indirectly, from independent claims 1, 19, 30, 41, 56, 82, 86, and 95, these dependent claims include the limitations of claims 1, 19, 30, 41, 56, 82, 86, and 95 that the combination *Heilweil* and *Carpenter* does not teach or suggest. *See* 35 U.S.C. § 112 ¶ 4 (2004). For this reason, Applicants respectfully request the withdrawal of these rejections.

B. Claims 4-6, 21-23, 33-35, 44, 59-61, 85, 87-89, and 97-99

Claims 4-6, 21-23, 33-35, 44, 59-61, 85, 87-89, and 97-99 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Heilweil* in view of *Carpenter* in further view of U.S. Patent No. 5,945,387 issued to Chatterji *et al.* (hereinafter "*Chatterji*"). With respect to these rejections, the Office Action states:

> Heilweil and Carpenter were discussed above. Heilweil and Carpenter do not teach the drilling fluid composition to further comprise a styrene-butadiene rubber latex.

> However, Chatterji teaches adding a solid filler material to an aqueous fluid composition to be used in a method for a subterranean formation application, wherein said solid filler material can be a rubber latex material to increase density/rigidity and/or provide durability to the fluid composition. (Abstract; col. 2, lines 28-61) The rubber latex material can be present in about 50-80% by weight of composition and can be a synthetic latex formed from emulsion polymerization, such as a styrene/butadiene latex. (Col. 8, line 26 co col. 9, line 37)
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> Therefore, it would have been obvious to a person of ordinary skill in the art at the time that the claimed invention was made to add a rubber latex (such as a styrene-butadiene latex) to the drilling fluid used in Heilweil and Carpenter's method of drilling a well bore. It would have been obvious to one skilled in the art to incorporate rubber latex in the fluid composition to attain a more durable/viscous drilling mud that provides a more efficient method of drilling as taught by Chatterji.

(Office Action at 4-5.) Applicants respectfully disagree.

As discussed above in Section III(A) the combination of *Heilweil* and *Carpenter* fails to teach a method of drilling using a fluid composition comprising polyvinyl pyrrolidone nanoparticles having an average particle size of less than about 1,000 nanometers or a drilling fluid that comprises polyvinyl pyrrolidone nanoparticles having an average particle size of less than about 1,000 nanometers, as required by independent claims 1, 19, 30, 41, 56, 82, 86, and 95, as amended. Nor does *Chatterji* teach these limitations. Rather, the Examiner merely relies on *Chatterji* for its alleged teaching of adding a styrene-butadiene rubber latex to an aqueous fluid composition. (*See* Office Action at 4-5.) As such, Applicants respectfully assert that the combination of *Heilweil*, *Carpenter*, and *Chatterji* fails to teach these limitations and respectfully request the withdrawal of these rejections for at least the reasons stated above in Section III(A).

IV. Remarks Regarding Rejections Under 35 U.S.C. § 102(b)

Claims 56, 64-70, 72, 82, 83, 95, 102-108, and 110 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Publication No. 2002/0149656 by Nohr *et al.* (hereinafter "*Nohr*"). With respect to this rejection, the Office Action states:

> Applicant's arguments filed regarding the 35 U.S.C. 102 rejection of claims 56, 64-70, 72, 82, 83, 95, 102-108, and 110 as anticipated by Nohr have been fully considered by deemed unpersuasive.

> Applicant's principal argument is that the claims have been amended to require the fluid composition to contain a bridging agent. However, Nohr discloses in paragraph [0024] on page 3 that the nanoparticles can comprise an oxide, such as zinc oxide, which is a well-known bridging agent. (See, e.g., col. 6, lines 19-30 in USPN 5,783,527 to Dobson teaching zinc oxide as conventional bridging agents).
>
> Thus, the instant claims, as amended, remain anticipated by Nohr.

(Office Action at 6.) Applicants respectfully disagree.

In order to form a basis for a § 102(b) rejection, a prior art reference must disclose each and every element as set forth in the claim. MPEP § 2131. Applicants respectfully assert that *Nohr* fails to disclose all of the elements of independent claims 56, 82, 95, as amended, as required to anticipate these claims.

With respect to independent claims 56, 82, and 95, *Nohr* fails to disclose a drilling fluid wherein the polyvinyl pyrrolidone nanoparticle source or particles comprise crosslinked polyvinyl pyrrolidone. Rather, *Nohr* discloses inks that contain silica nanoparticles treated with a low molecular weight polyvinyl pyrrolidone. *Nohr*, ¶ [0141]. *Nohr* does not disclose treating the silica nanoparticles with crosslinked polyvinyl pyrrolidone. Accordingly, *Nohr* does not disclose the required crosslinked polyvinyl pyrrolidone and, thus, cannot anticipate independent claims 56, 82, and 95 and their dependent claims.

Therefore, Applicants respectfully assert that independent claims 56, 82, and 95 and their respective dependent claims are not anticipated by *Nohr*. Accordingly, Applicants respectfully request withdrawal of this rejection with respect to claims 56, 65-70, 72, 82, 83, 95, 102-108, and 110.

V. No Waiver

All of Applicants' arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the cited references. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's

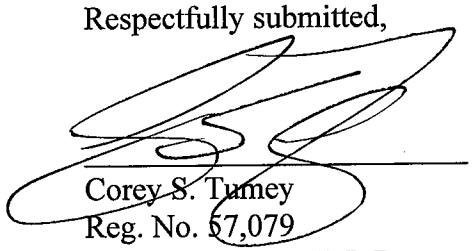
additional statements, such as, for example, any statements relating to what would be obvious to a person of ordinary skill in the art.

SUMMARY

In light of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants believe that no fees are due in association with the filing of this response. Should the Commissioner deem that any fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a Petition Therefor, and direct that any additional fees be charged to Baker Botts, L.L.P.'s Deposit Account No. 02-0383, Order Number 063718.0358.

Respectfully submitted,



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